

CLAIMS:

1. A dielectric antenna comprising a dielectric element mounted on a first side of a dielectric substrate, a microstrip feed located on the first side of the substrate and extending between the substrate and the dielectric element, and a conductive layer formed on a second side of the substrate opposed to the first, wherein an aperture is formed in the conductive layer at a location corresponding to that of the dielectric element.
2. A dielectric antenna comprising a microstrip feed located on a first side of a dielectric substrate, a conductive layer formed on a second side of the substrate opposed to the first and having an aperture formed therein, and a dielectric element mounted on a second side of the substrate within or at least overlapping the aperture.
3. An antenna as claimed in claim 1 or 2, wherein the aperture is greater in area than a surface of the dielectric element facing or contacting the dielectric substrate.
4. An antenna as claimed in claim 1, 2 or 3, wherein the aperture is surrounded on all sides by the conductive layer.
5. An antenna as claimed in claim 1, 2 or 3, wherein the aperture extends to at least one edge or corner of the second side of the substrate and is thus not surrounded on all sides by the conductive layer.
6. An antenna as claimed in any preceding claim, wherein the dielectric element is made of a low-loss dielectric ceramics material.
7. An antenna as claimed in any preceding claim, wherein the dielectric element is oblong or rectangular in shape.

8. An antenna as claimed in any one of claims 1 to 6, wherein the dielectric element is half-split or quarter-split cylindrical in shape.

5 9. An antenna as claimed in any one of claims 6 to 8, wherein edge regions or curved surfaces of the dielectric element are chamfered or flattened by grinding or the like.

10 10. An antenna as claimed in any preceding claim, wherein the aperture has a shape similar to that of a surface of the dielectric element facing or contacting the dielectric substrate.

11. An antenna as claimed in any one of claims 1 to 9, wherein the aperture has a shape different from that of a surface of the dielectric element facing or contacting the dielectric substrate.

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12. An antenna as claimed in claim 1 or any claim depending therefrom, wherein the microstrip feed passes between the dielectric element and the first side of the substrate at or towards one end of the dielectric element.

20 13. An antenna as claimed in any preceding claim, wherein the dielectric element has a major axis and a minor axis substantially parallel to the substrate, these axes respectively defining a length and a width of the dielectric element.

25 14. An antenna as claimed in claim 13, wherein the microstrip feed has a substantially linear extension which is substantially orthogonal to the major axis in a vicinity of the dielectric element.

15. An antenna as claimed in any one of claims 1 to 13, wherein the microstrip feed is curved, bent or curled in a vicinity of the dielectric element.

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16. An antenna as claimed in claim 13 or any claim depending therefrom, wherein the microstrip feed extends only part way across the width of the dielectric element.

5 17. An antenna as claimed in claim 13 or in claim 14 or 15 when depending from claim 13, wherein the microstrip feed extends across the entire width of the dielectric element.

10 18. An antenna as claimed in claim 13 or in claim 14 or 15 when depending from claim 13, wherein the microstrip feed extends beyond the entire width of the dielectric element.

19. An antenna as claimed in any preceding claim, wherein the aperture is partially filled with a conducting material that does not contact the conductive layer.

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20. An antenna as claimed in any preceding claim, wherein the dielectric element is provided with a conductive coating or layer on at least one surface thereof.

20 21. An antenna as claimed in claim 20, wherein the at least one surface is a surface of the dielectric element that faces or contacts the dielectric substrate.

22. A dielectric antenna substantially as hereinbefore described with reference to or as shown in the accompanying drawings.